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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,614	02/25/2004	Durham Kenimer Giles	CPS-2	2054
22827 7590 05/17/2007 DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449				
			EXAMINER MILLER, ROSE MARY	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 05/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<div style="border: 1px solid black; width: 150px; height: 20px; margin: 0 auto;"></div> <p style="text-align: center;">Office Action Summary</p>	Application No.	Applicant(s)	
	10/786,614	GILES, DURHAM KENIMER	
	Examiner	Art Unit	
	Rose M. Miller	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 41-55 is/are allowed.
- 6) ☒ Claim(s) 21-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 21-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention is directed to a judicial exception to 35 U.S.C. 101 in that it is an abstract idea (formulated on a computer) and is not directed to a practical application of such judicial exception because the claim does not require any physical transformation and the claim does not produce a useful, concrete, and tangible result such as displaying the comparison for an operator to review or indicating that the nozzle is operating properly.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 21, 25-26, 28, 36-38 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by **Baker et al. (US 5,004,152)**.

Baker et al. discloses a process for monitoring the operation of a fluid nozzle comprising: positioning a vibration sensor (accelerometer 5) in operative association with a fluid nozzle (see column 5, line 19 – column 7 line 37), sensing vibrations occurring at the fluid nozzle while the nozzle is emitting a fluid (see abstract, column 5 line 19 – column 7 line 37); sensing nozzle vibrations in at least one direction (accelerometer 5 measures vibrations in all

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directions) and comparing the sensed vibrations to a reference for determining whether the nozzle is operating properly (see abstract, column 5 line 19 – column 7 line 37).

With respect to claim 25, **Baker et al.** discloses a process wherein the sensed vibrations indicate whether any flow rate irregularities are occurring through the nozzle (see column 5 line 19 – column 7 line 37).

With respect to claim 26, **Baker et al.** discloses a process wherein the vibrations are sensed by an accelerometer (see column 5 line 19 – column 7 line 37).

With respect to claim 28, **Baker et al.** discloses a process wherein the reference comprises an initial vibration frequency pattern created by the fluid nozzle (see column 5 line 19 – column 7 line 37).

With regards to claims 36-38, **Baker et al.** discloses a process wherein vibrations are sensed at a frequency of from about 500 Hz to about 10,000 Hz, at a frequency of from about 1,000 about 8,000 Hz, or at a frequency of from about 2,000 Hz to about 7,000 Hz (see Figures 4(a) – 8(b)).

Allowable Subject Matter

6. Claims 1-20 and 41-55 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a system for monitoring the operation of a fluid nozzle comprising: a fluid nozzle configured to emit a fluid according to a predetermined spray pattern and flow rate; a vibration sensor positioned in operative association with the fluid nozzle, the vibration sensor sensing nozzle vibration in at least one direction; and a controller in communication with the vibration sensor, the controller, based on vibrations sensed by the vibration sensor, being configured to convey information to an operator regarding the flow rate or the spray pattern of a fluid being emitted by the nozzle.

The prior art of record also fails to teach and/or suggest an agrochemical delivery system for dispensing controlled amounts of a fertilizer or pesticide onto a crop comprising: a reservoir for holding an agrochemical, said reservoir including an outlet for dispensing said agrochemical; a pumping means for moving the agrochemical; a distribution manifold in communication with the outlet of the reservoir, the distribution manifold being connected to a plurality of dispensing tubes; a plurality of fluid nozzles, each nozzle being placed on the end of

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a corresponding dispensing tube for dispensing an agrochemical onto a crop, each nozzle including a Z axis that comprises the direction of flow of an agrochemical through the nozzle, a Y axis that is perpendicular to the Z axis and parallel to a direction of travel of the agrochemical delivery system when the system is dispensing an agrochemical, and an X axis that is perpendicular to the Z axis and perpendicular to the Y axis; a plurality of vibration sensors positioned in operative association with selected fluid nozzles, the vibration sensors sensing nozzle vibration in at least one direction, the at least one direction comprising the Z axis direction, the Y axis direction, or the X axis direction; and a controller in communication with each of the vibration sensors for receiving a vibration output from each of the sensors, the controller being configured to compare the vibration outputs to a reference for determining whether the corresponding nozzles are operating properly.

Response to Arguments

8. Applicant's arguments filed 14 February 2007 have been fully considered but they are not persuasive. Applicant argues the following:

"Turning now to the rejections under 35 USC § 101, Applicant has amended the claim 21 as indicated herein to obviate the rejection. Specifically, claim 21 has been amended to more particularly recite and distinctly claim a process for monitoring the operation of a fluid nozzle comprising positioning a vibration sensor in operative association with a fluid nozzle; sensing vibrations occurring at the fluid nozzle while the nozzle is emitting a fluid; sensing nozzle vibrations in at least one direction; and comparing the sensed vibrations to a reference for determining whether the nozzle is operating properly. Applicant respectfully submits that the invention of claim 21 produces a useful, concrete and tangible result. Accordingly, Applicant respectfully requests removal of rejection to claim 21 and allowance of claim 21 and its dependent claims 22-40."

Applicant's arguments are not persuasive. Where in the claim can the "tangible result" argued by Applicant be found? Merely "comparing the sensed vibrations" is not a tangible result. A tangible result would be an indication of an improperly operating nozzle derived from the comparison of the sensed vibrations to a reference. Therefore, the claims do not produce a "useful, concrete, and tangible result" as argued by Applicant.

With respect to the rejections of the claims under art, Applicant argues the following:

"Applicant further respectfully submits that claim 21 defines over Baker et al. As the Office Action concedes on page 4, paragraph 8, the prior art of record fails to teach and/or suggest the invention as recited in amended claim 21. Accordingly, Applicant respectfully submits that Baker et al. fails to teach and/or suggest the invention of claim 21 and respectfully request removal of rejection to claim 21 and allowance of claims 21-40."

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Applicant's arguments are not persuasive. First, how does claim 21 define over Baker et al.? Merely stating such does not make it so. Applicant needs to explain what features of the claim do not read on Baker et al.

Second, the previous Office Action does not concede on page 4, paragraph 8 that the prior art of record fails to teach and/or suggest the invention as recited in amended claim 21. The statement for reasons for the indication for allowance are for a system for monitoring the operation of a fluid nozzle and an agrochemical delivery system. Claim 21 is NOT a system but rather a method. In fact, claim 21 is not even a method for monitoring an agrochemical system, as the claim is not limited to any particular field. Claim 21 lacks important features found in the reasons for indication of allowance. Claim 21 lacks both the determination of a flow rate or a spray pattern as found in the first reason for indication for allowance and lacks the many features found in the agrochemical delivery system of the second reason for allowance. Therefore, this paragraph does NOT indicate a reason for allowance of claim 21.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M. Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RMM
10 May 2007


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